CTCN
CLIMATE TECHNOLOGY CENTRE & NETWORK

CTCN Technical Assistance

Request Submission Form

Guidelines:

- This Request Submission Form should be completed by the organisation requesting technical assistance from the Climate Technology Centre & Network (CTCN) in collaboration with the National Designated Entity (NDE) of the country in question
- The Form must be signed by the NDE. Please see updated contact list of NDEs here: http://unfccc.int/ttclear/support/national-designated-entity.html
- The Form can be submitted as a Word file containing a digital signature or as a signed and scanned PDF file in combination with an un-signed Word file
- For requests submitted by multiple countries, all the NDEs of the respective countries shall sign identical Forms before official submission to the CTCN
- NDEs have the opportunity to submit CTCN requests in collaboration with National Designated Authorities (NDAs) for the Green Climate Fund (GCF) if targeting the GCF Readiness Programme.

Requesting country or countries:	Kenya
Request title:	**Developing Circular Economy Roadmaps for abating GHG emissions from the Waste Sector in Kenya**
NDE	Kenya Industrial Research and Development Institute (KIRDI) Dr Kelvin Khisa Principal Research Scientist and CTCN Focal Point Coordinator Kelvin.khisa@kirdi.go.ke / kelvinnamukhasi@gmail.com PO Box 30650 – 00100 Nairobi Kenya
Request Applicant:	Please add name of organisation, contact person, position, email and address of the organisation requesting assistance from the CTCN.

Climate objective:

☐ Adaptation to climate change

☒ Mitigation of climate change

☐ Combination of adaptation and mitigation of climate change

Geographical scope:

☐ Community level

☐ Sub-national

☐ National

☒ Multi-country

If the request is at a sub-national or multi-country level, please describe specific geographical areas (provinces, states, countries, regions, etc.).

Problem statement related to climate change (up to one page):

This section should answer the question "what is the problem?" Please summarise the problem related to climate change and/or the negative impacts of climate change in the country that the request aims to address.

The urban population in Africa is increasing at a faster rate than any other continent (3.5 per cent per annum). Although waste generation is currently lower in Africa than in the developed world, sub-Saharan Africa is forecast to become the dominant region globally in terms of total waste generation if current generation trends persist. Waste generation in Africa, like in other developing regions in the world, is driven by population growth, rapid urbanization, a growing middle class, changing consumption habits and production patterns, and global waste trade and trafficking. The African Union has called on African cities to commit to recycling at least 50 per cent of the urban waste they generate by 2023 and to grow urban waste recycling industries.

According to the Kenyan NDC, waste contribute significantly negligible amounts of emissions. The country aims to achieve a low carbon, climate resilient development pathway. Kenya will continue to implement the NCCAP (2013-2017), and subsequent action plans beyond this period to achieve this target. This involves coming up with Sustainable waste management systems as a mitigation measure.

It is estimated that about 4000 tonnes of solid wastes are generated in the major urban areas of Kenya (KBS- 2010). The bio-degradable wastes undergo aerobic and anaerobic decomposition thereby emitting carbon dioxide and methane gases. A lot of the wastes are also burned resulting in the emission of large quantities of carbon dioxide. The plastic, paper and other solid wastes are similarly transported and dumped in the dumping sites. The wastes are then subjected to burning with resulting emissions of GHGs such as CO2. The main GHG emitted in landfills is methane. The TNA provide a number of strategies for management of the waste include circularity.

According to Nationally Appropriate Mitigation Action on a circular economy solid waste management approach for urban areas in Kenya, waste management is a major challenge in Kenya, especially in Nairobi, the rapidly growing capital. Nairobi produces around 2,400 tons of waste every day, of which only 38 per cent is collected and less than 10 per cent recycled (JICA, 2010). The remaining 62 per cent is left on illegal dumpsites and next to houses or burned. This is particularly the case for residents living in low-income areas, 2.5 million people, who cannot afford waste collection services. These services are unaffordable because of the costly and inefficient disposal at overfilled dumpsites. Additionally, the private sector overlooks the income generating opportunities from waste, such as recycling and composting. Uncollected waste causes severe health and environmental problems, and represents a missed opportunity from a development and economic perspective. The NAMA targets this missed opportunity by promoting an alternative to the existing waste value chain. Instead of waste being collected for disposal only, the NAMA facilitates the diversion of at least 90 per cent of collected waste away from disposal sites and towards various recycling practices. The NAMA creates multiple links currently missing in the value chain: recycling points, where waste will be sorted for subsequent recycling; and composting facilities, for the organic waste treatment. The NAMA will also research and operationalize new recycling technologies as well as strengthen existing recycling industries. Successful pilot models have already been tested by small and medium sized companies in Nairobi.

Agenda 2063 is a 50-year strategic socio-economic transformation framework for the African continent. It aspires to build a prosperous Africa based on inclusive growth and sustainable development, outlining ten aspirations to guide the continent's transformation (AUC 2015a). The Agenda 2063 Implementation Plan (2014– 2023) outlines specific goals to be achieved during the first ten years, including reference to the expected transformation of waste management (AUC 2015b). In particular, under goal 1 of aspiration 1 (A high standard of living, quality of life and wellbeing for all citizens), priority area 4 (Modern, affordable and livable habitats and basic quality services), cities will be recycling at individual African

countries are increasingly facing development challenges. Waste management is one of them. As the following sections will show, while different countries face different issues, there are common waste management challenges that could be solved using the teachings and practices of other African countries. The Africa Waste Management Outlook (WMO) is therefore intended to highlight both the challenges and the possible solutions for sustainable waste management in Africa, and to provide opportunities for countries to learn from what others in Africa are doing. To achieve this target, indicative strategies that develop or implement policies for the growth of urban waste recycling industries will need to be considered. However, to monitor progress against this goal, Africa will need reliable waste and recycling baseline data

The world can maximize chances of avoiding dangerous climate change by moving to a circular economy, thereby allowing societies to meet the goals of the Paris Agreement on Climate Action. This is the key finding of "The Circularity Gap Report 2019" released by the organization Circle Economy at Davos during the annual meeting of the World Economic Forum. The emerging international consensus is that, our overreliance on the wasteful linear economy is no longer sustainable and Government must work towards embracing the resource efficient circular economy. The linear economic model puts pressure on the use of virgin resources that are finite as well as on the environment through waste disposal. Therefore innovatively diverting waste destined for landfilling for wealth and employment creation is a wise thing to do in this era of resource scarcity and climate change.

A circular economy is a regenerative system in which resource input and waste, emission, and energy leakage are minimized by slowing, closing, and narrowing energy and material loops. This can be achieved through long-lasting design, maintenance, repair, reuse, remanufacturing, refurbishing and recycling. Circular economy is also an economical and industrial model, regenerative by design, which aims at recovering and re-using the materials that have already been processed, thus protecting natural resources from over exploitation. The objective is to keep scarce, valuable resources in circulation for longer periods of time, promoting recycling and avoiding loss of materials. Achieving these objectives requires the inclusion of processes such as reuse, re-design, reutilization, recycling, remanufacturing and disruptive business models like product-as-service and extended lifecycle.

Climate change and material use are closely linked. Circle Economy calculates that 62% of global greenhouse gas emissions (excluding those from land use and forestry) are released during the extraction, processing and manufacturing of goods to serve society's needs; only 38% are emitted in the delivery and use of products and services. There is a vast scope to reduce greenhouse gas emissions by applying circular principles – notably re-use, re-manufacturing and re-cycling - to key sectors such as the built environment. Yet it notes that most governments barely consider circular economy measures in policies aimed at meeting the Paris Agreement target of limiting global warming to as close as possible to 1.5°C.The report by Circle Economy, a group supported by UN Environment and the Global Environment Facility, finds that the global economy is only 9% circular - just 9% of the 92.8 billion tonnes of minerals, fossil fuels, metals and biomass that enter the economy are re-used annually.

Past and on-going efforts to address the problem (up to half a page):

This section should answer the question "what has been done or is currently being done to address the problem?" Please describe past and on-going processes, projects or initiatives implemented in the country or region to tackle the climate problem as described above.

Kenya has so far developed Nationally Appropriate Mitigation Action on a circular economy solid waste management approach for urban areas in Kenya

Specific technology[1] barriers (up to one page):

This section should answer the questions "what are the technology barriers that hinder national efforts described above" and "how will the CTCN technical assistance complement these efforts?" Building upon the problem statement and taking into consideration the existing efforts described above, please describe the specific technology barriers encountered by the requesting applicant to identify, assess or deploy climate technology(ies) in an effort to address the problem statement. The described barriers should be within the scope of the requested CTCN technical assistance (described in the section below).

There exists technology barriers in the country and in developing countries generally on adoption of the circular economy. This is not only limited to technical expertise and finances buts also include lack of policy, institutional and strategic frameworks to guide its adoption. In order to address these challenges, the CTCN is proposing to outline an intervention that will produce the outputs and that will be implemented within a period of up to 2020/2021. The overarching goal is to assess the current status of the integration of the concept of circular economy of the five requesting countries and to develop a draft roadmap. Such a roadmap should among other things address critical elements such as the creation of systematic circular economy facilitation programs (national circular economy platforms, establishment of regional circular economy support centers), establishment of circular economy support mechanisms for circular economy, generation of market demand for circular economy products, development of enabling policies and regulatory environment as well as the roll out of circular economy interventions across all the key sectors of the economy. The analysis shall identify key players, stakeholders, private/public initiatives, geographical areas as well as opportunities and barriers. The approach will incorporate and focus on the climate benefits originating from a circular economy model and identify the advantages that circularity would produce towards the implementation of the National Determined Contributions (NDCs) and the achievement of the goals of the Paris Agreement.

Sectors:

Please indicate the main sectors related to the request:

☐ Coastal zones	☐ Early Warning and Environmental Assessment	☐ Human Health	☐ Infrastructure and Urban planning
☐ Marine and Fisheries	☐ Water	☐ Agriculture	☐ Carbon fixation
☐ Energy Efficiency	☐ Forestry	☐ Industry	☐ Renewable energy
☐ Transport	☒ Waste management		

Please add other relevant sectors:

Cross-sectoral enablers and approaches:

[1] *"**any equipment, techniques, practical knowledge and skills** needed for reducing greenhouse gas emissions and adapting to climate change" (Special Report on Technology Transfer, IPCC, 2000)*

Please indicate the main cross-sectoral enablers and approaches

☐ Communication and awareness	☐ Economics and financial decision-making	☒ Governance and planning	☐ Community based
☐ Disaster risk reduction	☐ Ecosystems and biodiversity	☐ Gender	

Technical assistance requested (up to one page):

Founded on the problem statement, past/on-going efforts and technology barriers, please describe the requested technical assistance. The technical assistance should clearly contribute to mitigation or adaptation to climate change as described in the problem statement and contribute to overcome the specific technology barriers.

Objective;

The objective of this initiative is to assist in the effective development of country-specific roadmaps on circular economy. Based on the needs of each country, the scope of the roadmaps will be focused on the waste sector. The Roadmaps will be generated as the result of a participative process that will gather information about:

- key stakeholders and current initiatives.
- the circular economy value and definition of benefits, weaknesses, opportunities and challenges in each country.
- and will identify potential projects that can be prepared and scaled-up as a follow-up of this technical assistance.

Activities and Methodology:

Output 1: Development of implementation planning and periodical reporting documents

•Activity 1: Preparing the consultancy work plan, periodical progress reports and final reports.

Output 2: Diagnosis of key stakeholders and current initiatives related to circular economy in each country

•Activity 2.1: Kick-off meeting to present the technical assistance to the different stakeholders of the participating countries.

- Present the technical assistance plan (Deliverable 1.1) to gather information from the participating countries in order to adapt it to the requirements and current situation of each country.

•Activity 2.2: Exploration and diagnosis of stakeholders and initiatives

- Create the updated map of actors and processes of each participating country. This will be done by identifying key actors, existing initiatives, policy instruments, institutional framework and public-private partnerships, as well as local and national circular economy initiatives via consultations and interviews with organizations that are leading the issue in each country – ministries, government agencies, companies, associations, universities, groups and entrepreneurs – and international organizations that may have information on companies and groups that are developing circular models in each participating country. The updated stakeholder map and processes will be used for:

  1. Defining a conceptual framework of the actors and consultation mapping.
  2. Creating a diagram or conceptual framework as a result of the identification of the actors involved and their institutional arrangements (i.e. collaboration agreements), and creating public, private and inter-institutional platforms of existing information.
  3. Identifying involved or interested actors.
  4. Reviewing the organic statutes of public government actors and academia.

5. Sharing objectives, methodologies and the work plan for the development of the roadmap.
6. Knowing their experiences.
7. Evaluating potential participation commitments.
8. Identifying and classifying potential actors of the Roadmap.
9. Ideally grouping them into the following categories: a) Government / Public Sector b) Companies c) Civil Society Organizations d) Academy e) Entrepreneurship.
10. Intersecting actors with economic activities to facilitate identification on the map
11. Identifying and incorporating the NDCs of each participating country and their commitments regarding the Sustainable Development Goals (SDGs), SDGs 9, 12 and 13.
12. Identifying commitments and goals in accordance with the National Development Plans and the national legislation of each country
13. Compiling information related to activities 3, 4, 5 and 6.
14. Drafting deliverables for review, corrections and preparation of final versions

The level of experience, skills, level of knowledge, networks, interest, strengths/weaknesses and commitment to the development of a circular economy will be identified by carrying out consultations and interviews with potential participants of the roadmap.
Interviews will be conducted by differentiating between the five (5) categories defined in point 9. In total, a minimum of 5 and a maximum of 15 actors will be interviewed per participating country, prioritizing actors that are recognized by national and international organizations as leaders in circular economy. The definition of actors and processes for consultation and/or to be included in the diagnosis for the preparation of the roadmaps must have the approval of the National Designated Entity (NDE) of each country. NDEs will support the implementing organization in the identification of those actors and stakeholders and to facilitate the organization of stakeholder's meetings and interviews. During this activity, gender mainstreaming will be transversally incorporated. This circular economy analysis will also assess economic, social and environmental implications produced by men and women at disaggregated level.

Output 3: Identification of the circular economy value and definition of benefits, weaknesses, opportunities and challenges in each country
•Activity 3.1: Diagnosis of perceived benefits

- Analysis of the circular economy benefits which are recognized by the key actors identified in Output 2. Differentiation between the concept of "waste" – according to the legal definition in each country –, and the products that still have shelf life and value. Frame waste and products or sub-products which still have shelf life and value for each economic activity established in point 10 of activity 2.2 within the context of its environmental, social and economic benefits. The benefit of circular economy recognized by involved actors will also be analyzed.

•Activity 3.2: Diagnosis of strengths and opportunities
- Analysis of strengths and opportunities that participating countries have when it comes to the adoption of a general, sectorial or specific circular economy process agreed with the NDE, among others:

1. Industrial, innovative and technological infrastructure and capacities
2. Policies or initiatives related to recycling, climate change and circular economy
3. Governance and leadership
4. Level of incorporation of Non- Conventional Renewable Energies, NCRE (percentage of energy matrix)
5. Alignment of public and private agendas (commitment of government, companies, organizations, academia and society)
6. Job creation
7. Impact on NDCs and SDGs in each participating country
8. Identification of the map of the main economic activities of each participating country that might be most impacted by circular economy

•Activity 3.3: Diagnosis of weaknesses and barriers
- Analysis of weaknesses and barriers that the participating country presents in the adoption of a general, sectorial or specific circular economy process agreed with the NDE, in particular the following barriers:

1. Regulatory
2. Market
3. Cultural
4. Entrepreneurship support
5. Financing and capital
6. Industrial and technological
7. Recovery of products or materials (logistics, collection, repair and remanufacturing)

•Activity 3.4: Development of an indicators' matrix
- Generate a transparent and comparable circular economy indicator matrix and prepare the baseline for each country, comparing them with the best international practices.

Output 4: Identification of potential projects in circular economy for each participating country prioritizing specific geographical areas
•Activity 4.1: Definition of pilot projects
- As an outcome of the circular economy roadmap supported by the CTCN, at least one pilot project will be selected carrying high potential to be implemented as a follow-up of the technical assistance. The projects that will be identified in the five countries will be then presented during the final workshop. CTCN will assist the countries in the identification of the most appropriate financial organizations that could finance their continuation, e.g. GCF, GEF, regional banks, private investors/companies, etc. The following steps must be followed:

1. Define at least two economic activities and/or productive processes to develop a circular economy strategy
2. Identify and define the supply of waste that can still be used in economic activities and/or productive processes, as well as its location in the value chain.
3. Identify and define the demand for waste that can still be used in economic activities and/or productive processes, as well as its location in the value chain.
4. Identify the existing productive and technological structure to foster collaborations.
5. Identify local public and private organizations which are already developing or interested in developing the circular model of the pilot project.
6. Develop and create performance indicators which allow tracing and measuring the progress and compliance states of the pilot project.

•Activity 4.2: Presentation of the results to the participant countries
- Present the results and consult with the NDEs and the requesting organizations (as applicable) of the five participating countries.

•Activity4.3: Organization of a final workshop to present the results of the technical assistance in the participating countries.
- The workshop will be organized jointly with the COMESA secretariat. During the workshop the alignment to a regional platform on circular economy for Africa will be discussed, as well as South-South cooperation opportunities will be discussed. During the workshop each country will present its case study and a session will be organized to discuss:
  - Potential synergies at regional level;
  - The possibility of following up the work on circular economy through a regional platform which can disseminate the results of the technical assistance to other countries in the region and internationally.

Expected timeframe:

Please indicate the expected duration period for the requested technical assistance. Please note CTCN

technical assistance is limited to a maximum duration of 12 months.
12 Months

Anticipated gender and other co-benefits from the technical assistance:

Please describe the activities with gender linkages as well as the anticipated gender and other co-benefits (e.g. biodiversity, economic, social, cultural, etc.) that are likely to be generated as a result of the technical assistance.

Circular economy: Recycling and reusing of wastes have critical gender dimensions, particularly those that could be used in setting up or be used in an informal sector enterprise. Gender dimensions are important while developing broader developmental priorities that also influence waste management. These priorities include, for example, the local environment, health and hygiene, quality of life and lifestyles, economic and business opportunities from waste management, consumption/production patterns etc. This technical assistance will be executed taking into consideration the differentiated role gender plays in waste management.

Key stakeholders:

Please list the stakeholders who will be involved in the implementation of the requested CTCN technical assistance and describe their role during the implementation (for example, government agencies and ministries, academic institutions and universities, private sector, community organizations, civil society, etc.).

Stakeholders	Role to support the implementation of the technical assistance
National Designated Entity	NDE -Kenya
Request Applicant	
Please add as many stakeholders and lines as required.	• County Government(s) • The National Environment Management Authority (NEMA) • The Kenya Bureau of Standards (KEBS • The Energy Regulatory Commission (ERC) • Waste recyclers • Waste pickers • Informal youth groups • Private investors in the waste sector • Non-Governmental Organizations (NGOs)

Alignment with national priorities (up to 2000 characters including spaces):

Please describe how the technical assistance is consistent with national climate priorities such as: Nationally Determined Contribution, national development plans, poverty reduction plans, technology needs assessments, Low Emission Development Strategies, Nationally Appropriate Mitigation Actions, Technology Action Plans, National Adaptation Plans, sectorial strategies and plans, etc.

Reference document (please include date of document)	**Extract** (please include chapter, page number, etc.).
Nationally Determined Contribution (NDC)	Kenya NDC page 2 paragraph 4- waste management 2015

Technology Needs Assessment	The TNA -pg 33
National Adaptation Plans	
Nationally Appropriate Mitigation Actions	Nationally Appropriate Mitigation Action on a circular economy solid waste management approach for urban areas in Kenya
Add others here as relevant	

Development of the request (up to 2000 characters including spaces):

Please describe how the request was developed at the national level and the process used by the NDE to approve the request before submitting it (who initiated the process, who were the stakeholders involved and what were their roles?) and describe any consultations or other meetings that took place to develop and select this request, etc.

This technical assistance concept has been developed by the CTCN. In line with its commitments to the COP and also the recipient countries to develop a workplan for future activities which also encourages a regional approach to technical assistance. In line with this approach, the concept, CTCN selected (five) countries who share the common strategies of developing advancing Circular Economy roadmaps for abating GHG emissions from the Waste Sector.

Background documents and other information relevant for the request:

- Please list all relevant documents that will help the CTCN analyse the context of the request and national priorities. Please note that all documents listed/provided should be mentioned in this request in the relevant section(s), and that their linkages with the request should be clearly indicated. For each document, please provide web-links (if available) or attach to the submission form. Please add any other relevant information as required.
- Please indicate if this request has been developed with the support of the CTCN Request Incubator.

OPTIONAL: Linkages to Green Climate Fund Readiness and Preparatory Support

The CTCN is collaborating with the GCF in order to facilitate access to environmentally sound technologies that address climate change and its effects, including through the provision of readiness and preparatory support delivered directly to countries through their GCF NDA. These actions are in line with the guidance of the GCF Board (Decision B.14/02) and the UNFCCC, particularly paragraphs 4 and 7 of 14/CP.22 that addresses Linkages between the Technology and the Financial Mechanisms[2].

The CTCN is therefore implementing some of its technical assistance using GCF readiness funds accessed via the country's NDA. Any application for GCF support, including the amount of support provided, is subject to the terms and conditions of the GCF and should be developed in conjunction with the NDA.

Please indicate whether this request has been identified as preliminarily eligible by the NDA to be

[2] Please see:
https://unfccc.int/files/meetings/marrakech_nov_2016/application/pdf/auv_cop22_i8b_tm_fm.pdf

considered for readiness support from the GCF.

☐ Initial engagement: The GCF NDA of the requesting country has been engaged in the design of this request and the NDA will be involved in the further process leading to an official agreement for accessing GCF readiness support.

☐ Advanced engagement (preferred): The GCF NDA of the requesting country has been directly involved in the design of this request and is a co-signer of this request, the signature indicating provisional agreement to use readiness national funds to support the implementation of the technical assistance.

NDA name:

Date:

Signature:

Monitoring and impact of the assistance:

By signing this request, I affirm that processes are in place in the country to monitor and evaluate the technical assistance provided by the CTCN. I understand that these processes will be explicitly identified in the CTCN Response Plan and that they will be used in the country to monitor the implementation of the technical assistance following standard CTCN procedures.
I understand that, after the completion of the requested assistance, I shall support CTCN efforts to measure the success and effects of the support provided, including its short, medium and long-term impacts in the country.

Signature:

NDE name: Kelvin Khisa

Date: May 12, 2020

Signature:

THE COMPLETED FORM SHALL BE SENT TO THE CTCN@UNEP.ORG

The CTCN is available to answer all questions and provide guidance on the application process.